REMARKS

Claims 1-18 are currently pending in the application. By this amendment, claims 1, 7 and 13 are amended for the Examiner's consideration. The foregoing separate sheets marked as "Listing of Claims" shows all the claims in the application, with an indication of the current status of each .

The Examiner rejection of claims 1, 7, and 13 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,971,585 to Dangat et al. ("Dangat") has been affirmed by the Board of Patent Appeals in an opinion issued September 5, 2003. The Examiner did not agree with the applicants' contention that "rules and priorities" in Dangat were distinguishable from the "rules and priorities" in the claims of the present invention. The foregoing preliminary amendment makes explicit that the invention improves on the prior Dangat art by including within "rules and priorities" the feature of the invention which enables assignment of customers to different forecast groups, to which supplies can then be allocated.

The claimed invention, as recited in independent claims 1, 7 and 13, operates as shown in Figure 2. A single Supply Line 60 is shown for comparison to be the same as in the Figure 1 example, with 100 units of production in each of five successive periods. The Demand 62 table shows the same demand in period 2 of 300 units. Note, however, that this demand is from a customer and location which has been assigned to Forecast Group 2. This has been done to simulate the problem addressed by the invention, namely, the possibility of a subsequent order which a marketing agent of the user regards as a higher priority.

The operation of the claimed invention is shown in the Allocation 62 table. As a result of forecast group assignments according to the invention, and in particular in accordance with customer rules and priorities as provided for in the invention as a consequence of the addition of forecast groups, production is allocated by forecast group rather than being available to all demands on a first-come, first-serve basis. In practical effect, therefore, the demand shown in period 2 from a customer and location assigned to Forecast Group 2 is satisfied from the line labeled "Forecast Group 2" in the Allocation 62 table. It should be noted that, within the Forecast Group 2 allocation, the system operates on the same first-come, first-serve basis as under the prior art Dangat system. Thus, the demand of 300 units in period 2 is satisfied by the successive quantities of 80 in period 1, 80 in period 2, 50 in period 3, 50 in period 4, and 40 units out of the 80 units in period 5. In consequence, as of the system run performed after the demand of 300 units in period 2, there remains for Forecast Group 2 a balance of 40 units which are "Available to Promise" in period 5, as shown in the Forecast Group 2 line in the Profit ATP 66 table.

The innovation of the invention is shown in the Forecast Group 1 of the Allocation 62 table, where certain amounts of production have been allocated to Forecast Group 1, as of the system run after the demand of 300 units in period 2. These remain "Available to Promise" for subsequent higher priority Forecast Group 1 customers and locations, as shown in the Forecast Group 1 line in the Profit ATP 66 table.

In order to overcome the limitations of prior art techniques for determining what is "available to promise" (ATP) – limitations which are not addressed in Dangat – the present invention devised the forecast group concept. Each forecast group entry includes a manufacturing plant, material used by that manufacturing plant, a customer and a customer shipping location. So a customer may belong to multiple forecast groups based on the ship-to location, or multiple customers may be belong to a single forecast group. This all links back to what the priority determinations of marketing agents as to the relative importance of customers and customer locations. In the present invention, particular steps are taken before the Dangat BCD engine is run. The customer location (i.e. the "demand center" subscript *k* in the Dangat equations, defined at col 14, line 49) in the demands (of types including orders, forecasts, outlooks, backorders) are modified by forecast group. This provides a solution for the objective of the present invention to include multiple customers in the same forecast group, or to have multiple forecast groups for multiple customers, because the supply output of the Dangat BCD engine is by forecast groups. By contrast, supply output in the Dangat prior art is by customer location.

In both Dangat and the present invention the terms “rules and priorities” are used, but they are used in different contexts. In Dangat, the rules and priorities disclosed refer to manufacturing and planning guidelines which are used to match demand with assets. In the present invention the demand class of orders/forecast is manipulated in the demand configurator to get the best results out of what is disclosed in Dangat. But beyond this Dangat does not help to address the problem solved by the present invention. Dangat discloses demand classes and uses these to deal with manufacturing. Dangat uses the term “forecast” in the sense of “future orders,” whereas the present invention divides customers into “forecast groups” in order to deal with the availability of parts. These purposes are quite different. The rules and priorities described in the present invention are the rules by which firm orders, forecasts and new requests (which are “demand types”) are solved using the invention disclosed in Dangat, so that the capacity which is available to promise is accurately given. These rules and priorities are not disclosed or suggested in Dangat. None of the citations to Dangat relied upon by the Examiner describe or suggest the regime of the present invention, namely, having forecast groups of customers for optimizing the availability of parts to the order commitment process.

In both Dangat and the present invention a “solver” is used, but in different contexts. Dangat matches assets with demand and calculates when supply will be available to meet the orders. The present invention has an “available to promise” (ATP) solver which takes the supply output from Dangat and allocates the supply to different customers (forecast groups), nets out supply for existing orders and then generates delivery proposals for new orders or orders needing improved delivery dates. The solver in Dangat is used for planning manufacturing, whereas the solver in the present invention is used for order commitment, responsive to the question "do we have parts to ship" to priority customers. The solver of the present invention is different from – and is neither disclosed nor suggested by – the solver in Dangat. None of the citations to Dangat relied upon by the Examiner describe or suggest the regime of the present invention, namely, having forecast groups of customers for optimizing the availability of parts.

In addition, the demand class for each demand type (orders, forecasts, outlooks, backorders) can be varied for each forecast group. In the present invention, Forecast Group assignments are made at the same level of detail as customer location in Dangat. The present invention enables varying demand classes for different demand types, based on the customer's forecast group. The input provided by the user's marketing agent is to designate a forecast group for each customer and customer location (and also demand type, if necessary). The system then uses the customer rules and priorities to determine demand class from forecast group and demand type. The forecast group concept enables the present invention to use the Dangat BCD engine (with modifications, as the PROFIT ATP engine) to allocate supply (i.e. make order commitments) in accordance with the importance of the customer to the business.

By contrast, the Dangat disclosure generalizes by demand type. This does not create or suggest any difficulty in Dangat, because Dangat is concerned with manufacturing rules and priorities. Dangat is simply not enabling with respect to the order commitment rules and priorities which are the subject of the present invention.

Thus, in the present invention, if available resources are insufficient, forecast group and demand class variables (which are provided by marketing) are used by the PROFIT ATP engine, which then generates production allocation estimates by forecast group of which demands are to be met. If there is a shortage, the more important customers are automatically given priority, in the form of an allocation by Forecast Group which is shielded from being used to satisfy demands of lower priority Forecast Groups. Also, because it uses the Dangat BCD engine, the PROFIT ATP engine prioritizes manufacturing activity.

It should be noted that "demand priorities" as used in Dangat is a term that does not cover forecast groups. While there is some overlap in terminology, this overlap is not a substitute for analysis. The applicants are entitled to be their own lexicographers and to use terminology in their own context. For example, both in Dangat and the present invention, the term "demand class" refers to "a numerical value assigned to each independent demand to indicate its relative priority to other demands" (Dangat, col 5, lines 16-18 and col 10, lines 45-47). "Demand priorities" in Dangat refer to the prioritization of demands based upon the single "demand class" that is assigned to each demand (see Dangat, col 15, lines 16-17). A "demand" is established at the outset as an item in the production system, and the rules and priorities in Dangat are designed to deal with manufacturing variables. The "forecast group" concept, by using a simplified "run" of the Dangat BCD engine (single BOM) and treating the run's supply line output as a planned receipt, enables prioritization of the commitment process. Thus it is of fundamental significance that the "rules and priorities" of the present invention pertain to the order commitment process, as distinct from the "rules and priorities" of the Dangat prior art which pertain to the manufacturing process.

In view of the foregoing, it is requested that the application be reconsidered, that claims 1-18 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at 703-787-9400 (fax: 703-787-7557; email: clyde@wcc-ip.com) to discuss any other changes deemed necessary in a telephonic or personal interview.

If an extension of time is required for this response to be considered as being timely filed, a conditional petition is hereby made for such extension of time. Please charge any deficiencies in fees and credit any overpayment of fees to Deposit Account 09-0456 (IBM-Burlington).

Respectfully submitted,

Clyde R Christofferson
Reg. No. 34,138

Whitham, Curtis & Christofferson, P.C.
11491 Sunset Hills Road, Suite 340
Reston, VA 20190
703-787-9400
703-787-7557 (fax)